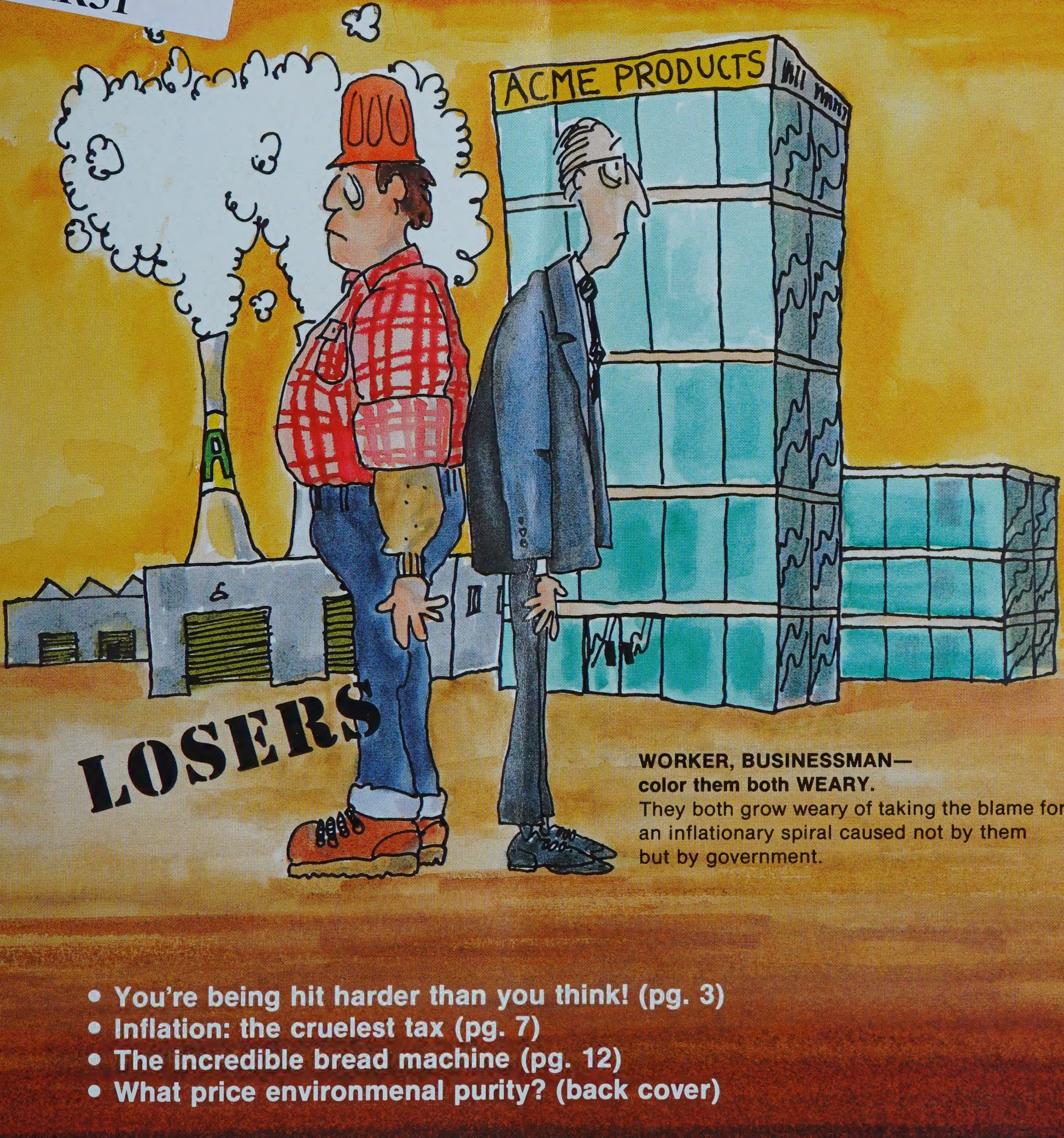
DOW CANADIAN

INSIGHT

August 1979

EDITION



WORKER, BUSINESSMAN— color them both WEARY.
They both grow weary of taking the blame for an inflationary spiral caused not by them but by government.

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August 1979
Volume 2, Number 2

LETTERS

The public's right to know

Nothing in your article in Dow Canada's *Insight* for November, 1978, ("Anatomy of an environmental crisis: Mercury in the St. Clair River") suggests the actual sequence of events in public awareness of the hazards of mercury poisoning in the St. Clair River.

You note that "The Federal Government was already active on this whole question in 1969, but when the *London Free Press* printed a speculative article, everybody panicked and it became a major issue."

What you neglected to point out was that between May, 1969, and February, 1970, there was no public knowledge of the level of mercury pollution, nor public awareness of the health hazards involved. Whatever were the actions being taken prior to February 4, 1970, they did not have the urgency, nor the "crash program," to use your words, adopted February 4.

What you further neglected to mention was the date of the *London Free Press* article you refer to as "speculative." It was January 10, 1970. There is a relationship, in my opinion, between the article and the direct and prompt actions of OWRC and Dow after February 4, 1970.

Having made that point, I'd like to add another opinion. The January 10 article was not speculative. It was carefully researched in meticulous detail by Del Bell, one of our most careful and accurate reporters, and supported in every detail by facts and opinions of qualified researchers in the field, about which there was not then and has not been since, any valid refutation.

It is worth noting that in Bell's article, it was stressed that information, which your 1978 article says was then available to Dow, was not made available by Dow when requested by University of Western Ontario researchers.

The *London Free Press* believes that the public is entitled to know any fact affecting the general welfare which is known to its public servants, in this case the OWRC. If there was panic, the examples of Minamata disease in Japan and French River provide, in our opinion, more than adequate justification for our having initiated it.

William C. Heine, Editor,
The London Free Press, London, Ont.

(**Ed. Note:** Dow Canada's manager of Environmental Affairs, Dr. D.M. Young, replied to Mr. Heine. His letter follows.)

I agree that there was a relationship between your January, 1970, article on mercury pollution in the Great Lakes and the subsequent actions of OWRC and Dow after February 4, 1970. This was what I had intended to imply.

It is very probable that your 1970 article prompted the OWRC to speed up its survey work as much as it could, perhaps by a few weeks. But the fact is that the scientific evidence accumulated by the OWRC and Dow up to about January, 1970, was not conclusive enough to justify public disclosure at that time because no analytical results on fish samples from Lake St. Clair were then available. If those fish tests had proven negative, then the public would have been mislead and probably alarmed without just cause. That would have been a highly irresponsible act.

I agree that the text of Mr. Del Bell's article was indeed well researched, accurate and thoughtful, but it was seasoned with heads, boxed copy and photo captions that gave the piece a sensationalistic flavor. For example, boxed copy said "the *possibility* arises that at least part of the Great Lakes fishery *may* be contaminated and, *perhaps,* unsafe for human consumption." The italics are mine.

Further, a photo of a boy on the lake ice, holding a string of fish, carried the caption "A feed of perch . . . a dose of mercury?"

Those remarks, in the absence of a single fish analysis for mercury, are speculative. You may prefer the word "prophetic" but both mean making comments without the benefit of facts.

I recall the circumstances surrounding the information requested by University of Western Ontario researchers and which was not made available by Dow. Mr. Fimreite of the UWO sent out a questionnaire on mercury use to a large number of companies across Canada. Because of its form letter nature and because certain data requested was not available at that time, an administrative secretary neither replied nor brought it to the attention of appropriate Dow technical personnel until much later in 1970.

I would have to agree with you that the public is entitled to know any *fact* affecting the general welfare which is known to its public servants. However, until that "fact" is corroborated by conclusive scientific research and qualified scientists have had time to properly interpret what those "facts" really mean (in terms of actual hazard to the populace), the truth is that the so-called "fact" could easily turn out to be a false

Continued on page 17

Cover: Our illustration is one of dozens of tongue-in-cheek yet illuminating cartoons appearing in a soft-cover book titled "Inflation Coloring Book" recently published by Quandary House, P.O. Box 773, Manhattan Beach, California, 90266. Others from the book illustrate John Meyer's article on page 7. All are copyright by the book's author, R.W. Grant, and are reproduced here with his permission.

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BULLETIN BOARD

"No dough" policy makes fascinating reading

Readers whose appetite is whetted by the poem on page 12 of this issue may be interested in reading more from World Research's incisive paperback "The Incredible Bread Machine". The book was written by six authors all under 27 years and is not only entertaining but informative as well. The young authors come up with some telling answers about how the free market system really works and how intervention has historically gummed things up. They see capitalism as "the incredible bread machine" and government intervention (from credit expansion to price controls) as a "no dough" policy. Notably lacking in hard to understand economic jargon, their work is impressive because it is written with simple, "cool", occasionally funny but precise reason. ***Write to us if you would like a complimentary copy.***

Review panel supports Dow research findings

Last February a five-member panel of independent scientists was organized to review the Dow study on "The Trace Chemistries of Fire — A Source Of and Route For the Entry of Chlorinated Dioxins into the Environment". The Dow study was released in November 1978, after an intensive four-month effort by Dow to identify the source of minute quantities of dioxins taken from the Tittabawassee River near Midland, Mich. Amid a great deal of controversy as to the validity of Dow's research findings, this special panel was convened. Their findings were released in late June. The panel chairman, Dr. Lockhart B. Rogers of the University of Georgia, commended the Dow researchers for the excellence of their procedures and said that "the data strongly indicate that PCDD compounds are found in the variety of environmental samples" (taken locally and from places remote from Midland). Dow researchers had concluded that very minute but measurable amounts of dioxins apparently occur everywhere as a natural consequence of many combustion processes including auto exhausts, incinerators, backyard barbeques, and cigarettes.

Jobs big benefit from industrial expansion

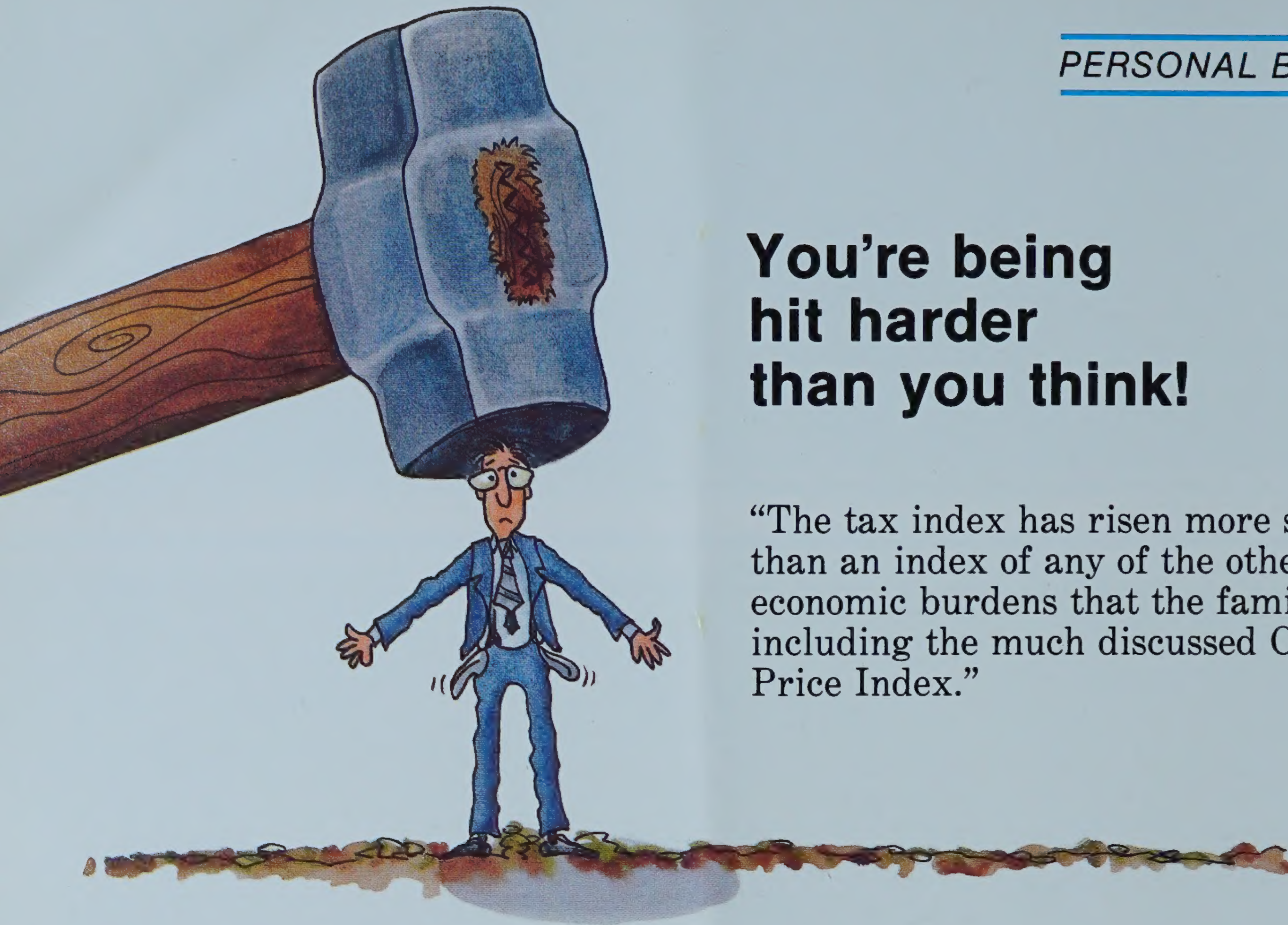
In a speech to the Canadian Chemical Producers' Association Annual Meeting in June, Dow Canada president Robert E. Naegele forecast a bright future for that part of the petrochemical industry which is based on natural gas: aliphatic hydrocarbons and their derivatives. He said that Canada should press hard to gain duty-free access to U.S. markets for a limited range of such chemicals made in Canada in return for a small portion of Canada's increased natural gas exports to that country. He argued that such a move would be a powerful stimulus to new job creation here: "We've got to curtail the wholesale shipments of Canada's raw resources to other countries and buying back finished goods. Thats exporting jobs instead of creating opportunities here." Copies of Naegele's complete text are available. Write to the editor of ***Insight Edition.***

Weeds may be new oil source

Several U.S. companies want to go into the weed business, stirred by a chemist who has discovered a way to turn pesky plants into high grade petroleum. "We're at the point where it is economic to do it," said Russell Buchanan, a U.S. government chemist, recently. "When companies and countries start paying over $22 a barrel for oil, then our discovery begins to look reasonable." Buchanan heads a team of scientists analyzing about 300 species of plants to rank them as possible sources of hydrocarbons, the chemical "backbone" of motor fuels, rubber, paints, and plastics. One official said that existing technology can extract 10 barrels of high grade oil from an acre of common desert milkweed at a cost of $17 to $20 a barrel.

Rowe receives Cummings Award

Dr. V.K. Rowe, a Dow Research Fellow, has been named the recipient of the 1979 Cummings Award by the American Industrial Hygiene Association (AIHA). Dr. Rowe is the second Dow scientist to win this award; Dr. Don D. Irish received it in 1966. The award was established in the name of the late Donald Cummings, a pioneer leader in Industrial Hygiene. It was established in 1944 and has been presented annually to recognized leaders in the field. The award consists of a plaque, honorarium, and the honor of addressing the combined AIHA and American Conference of Governmental Industrial Hygienists (ACGIH) membership at their annual conference in Chicago.



You're being hit harder than you think!

"The tax index has risen more sharply than an index of any of the other economic burdens that the family faces, including the much discussed Consumer Price Index."

The Fraser Institute[1] of Vancouver has published a new book that is sure to make even the most apathetic taxpayer gulp in dismay. The title — "Tax Facts: The Canadian Consumer Tax Index and You" — isn't a bookstand "grabber" but its contents are far from the dull number-tumbling tome implied.

[1]The Fraser Institute is an independent Canadian economic and social research and educational organization. It has as its objective the redirection of public attention to the role of competitive markets in providing for the well-being of Canadians. Where markets work, the Institute's interest lies in trying to discover prospects for improvement. Where markets do not work, its interest lies in finding the reasons. Where competitive markets have been replaced by government control, the Institute's interest lies in documenting objectively the nature of the improvement or deterioration resulting from government intervention. The Fraser Institute is a national, federally-chartered, non-profit organization financed by the sale of its publications and the contributions of its members.

Interested readers may obtain a complimentary copy of "Tax Facts: The Canadian Consumer Tax Index and You" by writing to the Editor of Insight Edition, *or by purchasing a copy at any Canadian bookstore.*

Written by Sally C. Pipes and Michael Walker, the book is the product of over a year's research involving the analysis of 51 different tax categories, 21 income sources, and the activities of three levels of government. The Fraser Institute's study exposes the direct and hidden tax burdens that Canadians bear. Walker is the director of the Institute: Sally Pipes is an economist and assistant to the director.

The results of this assessment of our tax system are mixed. On the whole they indicate that the tax bill of the average family has increased 302 percent since 1961; that the rate of increase in the tax bill reached a peak in 1975 and has been stable or falling since then. The reason for the decline is the increasing extent to which governments (especially the federal government) have engaged in deficit financing. The bonds that governments issue to cover these deficits are, in effect, deferred taxation since tax revenue must ultimately be raised to pay the interest and redeem the bonds. In order to account for this *deferred taxation*, the Institute has calculated the tax burden of Canadians both including and excluding the deficits.

The Consumer Tax Index

In 1976 the Fraser Institute began compiling an index of taxation called the Consumer Tax Index. This index tracks the tax bill faced by the average Canadian family over the years. In 1961, for example, the average family had an income of $5,500 and faced a total tax bill of $1,863; by 1978, the average family was earning $20,000 but of that $7,486 went to the tax collectors at the federal, provincial and municipal levels in the form of hidden and direct taxes. The Institute's tax index shows that the tax bill of the average family has increased by 302 percent since 1961. Including deferred taxation, the index increased by 336 percent.

CONSUMER TAX INDEX

Year	Excluding Deferred Taxation	Including Deferred Taxation
1961	100.0	100.0
1965	132.0	139.0
1969	167.0	184.0
1972	235.0	263.0
1974	312.0	354.0
1976	343.0	383.0
1978	402.0	436.0

INCOME, TAXES AND SELECTED EXPENDITURES OF THE AVERAGE CANADIAN FAMILY (dollars)

Year	Income: Average Cash Income	Income: Total Income Before Tax	Taxes: Average Taxes Paid	Taxes: Average Taxes Paid (Including Deficits)	Selected Expenditures†: Average Shelter Expenditures	Selected Expenditures†: Average Food Expenditures	Selected Expenditures†: Average Clothing Expenditures
1961	5,500	8,187	1,863	1,863	1,066	1,305	491
1965*	6,750	9,801	2,458	2,587	1,206	1,513	603
1969	8,000	11,323	3,117	3,422	1,347	1,721	713
1972	10,500	14,783	4,382	4,907	1,794	1,930	768
1974	13,500	18,998	5,807	6,600	2,102	2,469	938
1976	17,500	23,240	6,390	7,128	2,819	2,960	1,176
1978**	20,000	27,101	7,486	8,123	3,781	3,549	1,474

† All selected expenditure items include indirect taxes.
* Estimates for 1965 are ratio and trend estimates.
**Estimates for 1978 are based on separate estimates of the 1978 income, tax and family distributions.

Source: Statistics Canada Urban Family Expenditure 1976, Preliminary; 1974, Catalogue No. 62-544; 1972, 62-541; Family Expenditure in Canada, Volume 1, All Canada, 1969, Catalogue No. 62-535 and Urban Family Expenditure, 1962, Catalogue No. 62-525.

INCOME, TAXES AND SELECTED EXPENDITURES OF THE AVERAGE CANADIAN FAMILY EXPRESSED AS INDICES BASED IN 1961

Year	Taxes: Consumer Tax Index	Taxes: Consumer Tax Index (Including Deficit)	Income: Total Income Before Tax Index	Consumer Prices: Consumer Price Index	Selected Expenditures†: Average Shelter Expenditure Index	Selected Expenditures†: Average Food Expenditure Index	Selected Expenditures†: Average Clothing Expenditure Index
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1965*	131.9	138.9	119.7	107.4	113.1	115.9	122.8
1969	167.3	183.7	138.3	125.5	126.4	131.9	145.2
1972	235.3	263.4	180.6	139.8	168.3	147.9	156.4
1974	311.8	354.3	232.1	166.8	197.2	189.2	191.0
1976	345.1	382.6	283.9	198.7	264.4	226.8	239.5
1978*	401.9	436.0	331.0	233.7	354.7	271.9	300.2
Per cent increase 1961-1978	301.9	336.0	231.0	133.7	254.7	171.9	200.2

† All expenditure items include indirect taxes.
* Expenditure data for 1965 and 1978 are trend estimates.

Source: The figures in this Table are converted to indices by dividing each series in preceding Table by its value in 1961 and then multiplying that figure by 100.

In comparing the tax index to other items that consumers spend their income on, the Institute notes that the tax index has risen more sharply than an index of any of the other economic burdens that the family faces — including the much discussed Consumer Price Index. Total outlays on taxes now account for a more significant chunk of the consumer's budget than shelter and food combined — a complete reversal of the situation in 1961 as the following Tables show.

TAX RATES ON TOTAL INCOME BEFORE TAX (percent)

Year	Family whose income was one-half the average	Family whose income was average	Family whose income was twice the average
1961	20.1	22.8	30.9
1965	22.8	25.1	32.1
1969	25.7	27.5	33.5
1972	26.0	29.6	35.1
1974	28.3	30.6	37.3
1976	26.1	27.5	37.0
1978	26.0	27.6	40.3

TAX RATES (INCLUDING DEFICITS) ON TOTAL INCOME BEFORE TAX (percent)

Year	Family whose income was one-half the average	Family whose income was average	Family whose income was twice the average
1961	20.1	22.8	30.9
1965	24.1	26.4	33.8
1969	28.5	30.2	36.8
1972	29.2	33.2	39.4
1974	32.2	34.7	42.4
1976	29.6	30.7	41.8
1978	29.4	30.0	44.1

Tax rate falling

The Institute's calculations show that since 1975 the tax rates faced by the average family have been falling. This has been due to two factors. First of all, governments at all levels — but especially the federal government — have been deferring taxes by issuing bonds to finance their expenditures. This has meant less reliance on tax revenue and, hence, the possibility to allow average total tax rates (excluding deferred

taxation) to fall (from 33.3 percent in 1974 to 31.6 percent in 1978). Secondly, the position of the average family has improved at the expense of those with incomes above the average whose tax rates have steadily increased since 1961 (40.3 percent in 1978 versus 30.9 in 1961), as the previous tables show:

Who pays the taxes?

The Institute also examined the proportion of the total tax bill paid by the various income groups in the economy. That analysis revealed the fact that in 1976 the top 30 percent of families (those earning $21,494 or more) paid 66.5 percent of all taxes levied by government (60.9 percent in 1961). The top ten percent accounted for 36.3 percent (35.6 percent in 1961) as the next table shows:

DECILE DISTRIBUTION OF TAXES (percent)

	Lower Income Groups			Middle Income Groups				Upper Income Groups		
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1961	2.1	2.1	4.5	5.7	6.7	7.7	10.5	10.7	14.6	35.6
1969	1.1	2.0	4.0	5.3	6.9	7.7	9.4	11.8	15.0	36.9
1972	0.6	1.9	3.5	5.1	6.7	8.4	9.8	12.4	16.1	35.5
1974	0.6	1.8	3.7	5.1	6.7	8.4	9.6	13.0	15.9	35.5
1976	0.6	1.9	3.6	5.1	6.0	7.6	8.6	12.9	17.3	36.3

(The average incomes of the income classes in the Table are: 1st: $2,494; 2nd: $5,662; 3rd: $8,504; 4th: $10,852; 5th: $13,659; 6th: $17,496; 7th: $19,155; 8th: $23,833; 9th: $27,891; 10th: $46,120).

Source: Fraser Institute Canadian Tax Simulator (CANTASIM)

Focus on income tax

The Institute's analysis of personal income taxes is particularly revealing. It shows that 50 percent of all income taxes were paid by individuals with incomes in the range $12,000 to $25,000 but that the top 14 percent of taxpayers — those declaring incomes of $20,000 or more — contributed about 45 percent of the total tax bill. The same top 14 percent received only 28 percent of total income earned.

The not-so-obvious tax bill

One of the most revealing calculations provided by the Institute's study is the relationship between income taxes and other taxes. While most Canadians are used to considering income taxes as the most significant taxes they pay, the fact is that other taxes account for a larger fraction of the total tax bill. In 1978, for example the average family paid income taxes of $3,134. Other taxes, ranging from oil and motor vehicle taxes to amusement and property taxes, amounted, in total, to $4,352. In other words, taxes other than income taxes account for nearly 60 percent of the total tax bill of the average Canadian family.

Comparisons with the U.S. tax system

In its forthcoming book, "Tax Facts" which summarizes the tax study, the Institute also provides a comparison of Canadian and U.S. tax rates. The comparison (done for 1976 on the most recent U.S. statistics available) indicates that the total tax rate faced by Canadians is, on average 3.2 percent higher than in the U.S. — in dollar terms that amounts to a difference equal to all of the increase in incomes that occurred in Canada during 1978.

TAX RATES BY INCOME CLASS CANADA AND U.S. 1976 (percent)

	Lower Income Groups			Middle Income Groups				Upper Income Groups		
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Canada	15.7	20.9	25.2	27.5	27.0	27.3	27.9	31.1	33.4	38.8
U.S.	13.4	15.2	18.6	21.7	24.1	26.0	27.0	28.3	30.2	38.5
Difference	2.3	5.7	6.6	5.8	2.9	1.3	0.9	2.8	3.2	0.3

Average difference: 3.2 percent

(The average incomes of the income classes in the Table are: 1st: $2,494; 2nd: $5,662; 3rd: $8,504; 4th: $10,852: 5th: $13,659; 6th: $17,496; 7th: $19,155; 8th: $23,833; 9th: $27,891; 10th: $46,120.)

While Canada's tax rates are above U.S. tax rates for all income groups, the actual difference ranged from 6.6 percent in the third decile to 0.3 of a percent in the tenth decile. In general, low-income taxpayers face a higher rate of tax in Canada while the highest ten percent face about the same tax rate.

Deferred taxation — The balanced budget tax rate

This year, for the first time, the Institute is providing a calculation of the tax bill that Canadians would have to face if governments had to finance all expenditures from current tax revenue. In effect, governments have been able to increase expenditures in recent years while letting the average tax rate fall because they have increasingly resorted to deficit financing — i.e. issuing bonds. However, these debts and the interest on them must ultimately be paid and the current value of those future liabilities is, in fact, equal to the amount of the deficits being accumulated. The need to reckon with these deferred taxes is becoming increasingly important as the size of the federal deficit reaches unprecedented proportions.

The Institute's "Balanced Budget Tax Rate" is calculated on the basis of all levels of government paying as they go — or operating on a balanced budget.

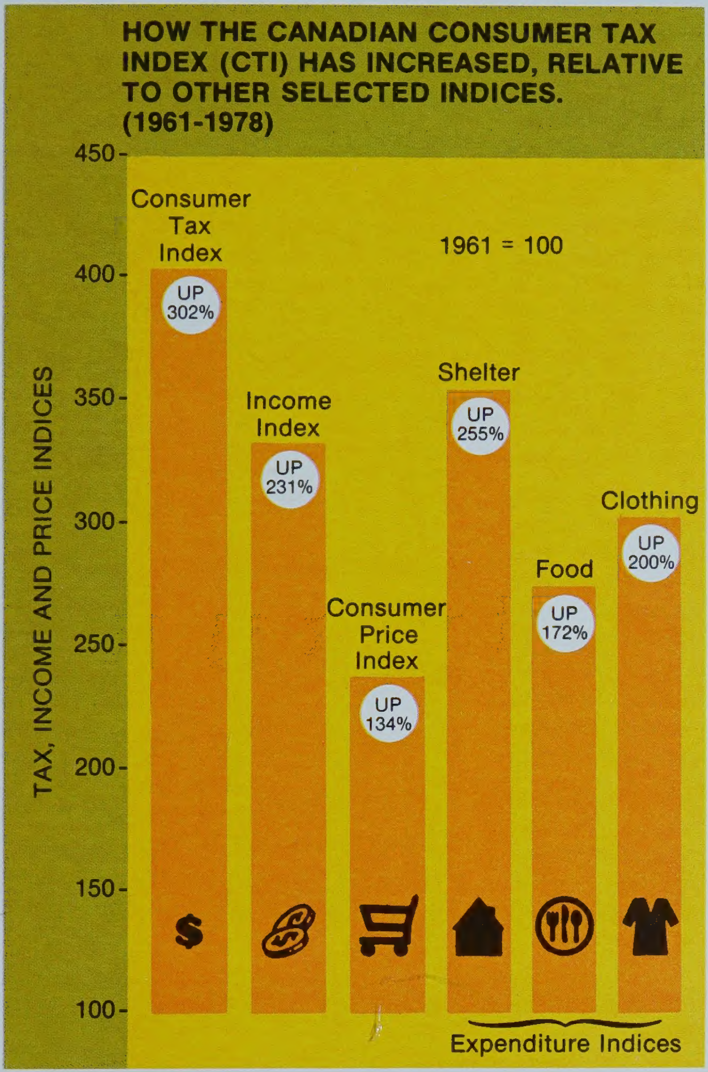
TOTAL TAX RATE ALL LEVELS OF GOVERNMENT — ALL TAXES (percent)

Year	Excluding Debt	Including Debt
1961	25.2	25.2
1969	31.1	34.3
1972	31.6	35.5
1974	33.3	37.8
1976	31.8	35.9
1978	31.6	37.5

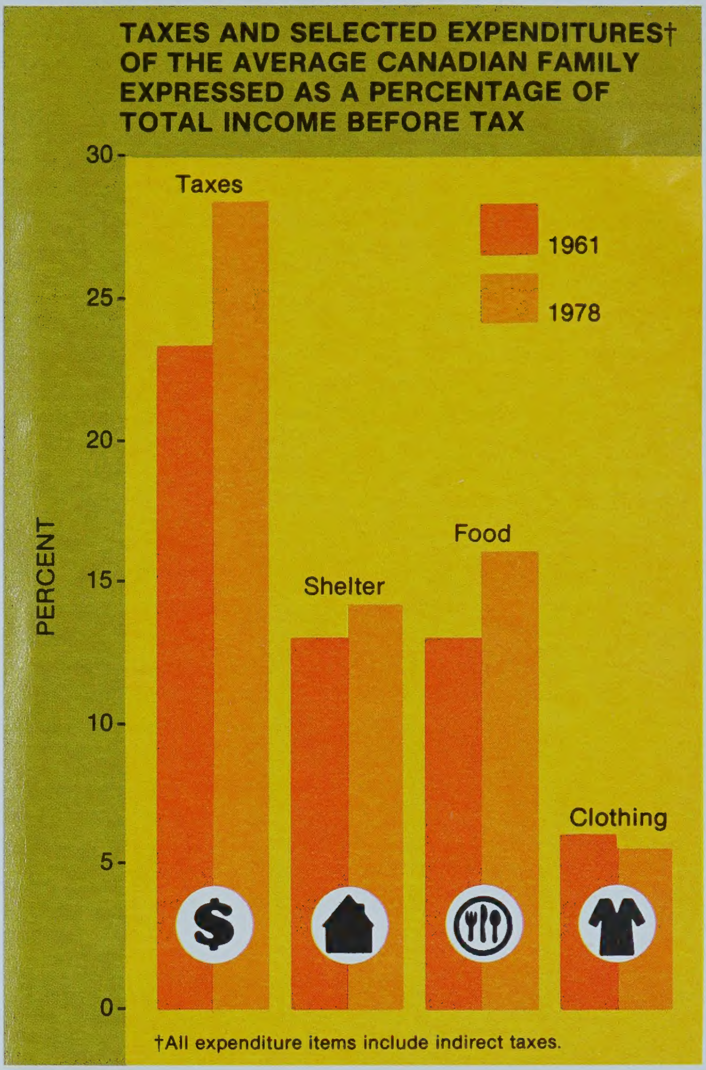
For each year, the calculation shows what the tax rate would have been had all levels of government balanced their budgets in that year. (The results do not include the borrowing of crown corporations or other agencies.) The results are very interesting:

The fiscal illusion

The comparison of the overall tax rates indicates that once borrowing has been taken into account, the apparent decline in tax rates that began in 1974-75 has actually been reversed. It also shows that the aggregate tax rate in 1978 including debt issued is six percent higher than the tax rate that Canadians actually faced. To the extent that Canadians have been made to feel better off by the decline in tax rates, they have been subjected to a massive fiscal illusion. □



HOW THE CANADIAN CONSUMER TAX INDEX (CTI) HAS INCREASED, RELATIVE TO OTHER SELECTED INDICES. (1961-1978)
TAX, INCOME AND PRICE INDICES
450
400
350
300
250
200
150
100
1961 = 100
Consumer Tax Index
UP 302%
Income Index
UP 231%
Consumer Price Index
UP 134%
Shelter
UP 255%
Food
UP 172%
Clothing
UP 200%
Expenditure Indices



TAXES AND SELECTED EXPENDITURES† OF THE AVERAGE CANADIAN FAMILY EXPRESSED AS A PERCENTAGE OF TOTAL INCOME BEFORE TAX
PERCENT
30
25
20
15
10
5
0
Taxes
Shelter
Food
Clothing
1961
1978
†All expenditure items include indirect taxes.

Inflation: the cruelest tax

"There was little hope that inflation could be controlled when most Canadians were sheltered from its effects."

by John A. Meyer[1]

[1]*John Meyer is a business consultant who writes a daily column of financial comment for the Montreal* Star, *the Winnipeg* Free Press *and the Calgary* Albertan. *His work also appears regularly in the Toronto Board of Trade* Journal *and he writes a special monthly column on finance for* Executive *magazine. Meyer is chairman of the Royal Bank's "Econoscope Round Table", a monthly taped discussion of the economy. After 30 years in journalism, he retired as editor of* The Gazette, *Montreal, to begin his second career as a consultant. Born in Toronto, he now makes Montreal his home.*

Ed. Note: *The Winners and Losers cartoons are from a fascinating soft-cover book called "Inflation Coloring Book" (copyright R.W. Grant. Reprinted here with permission).* **Insight Edition** *has obtained a supply because we felt that some readers might like to have their own copy (it is not generally available from book stores). Write to us and we'll send you a complimentary one.*

The cost of living, as measured by the consumer price index, has just about doubled since the beginning of the 1970s. What the dollar now buys has been just about halved. But the high rate of inflation, prior to this year, had not caused anything like the public concern in Canada that it has caused in other countries nor have the efforts made to contain it been as vigorous and unrelenting.

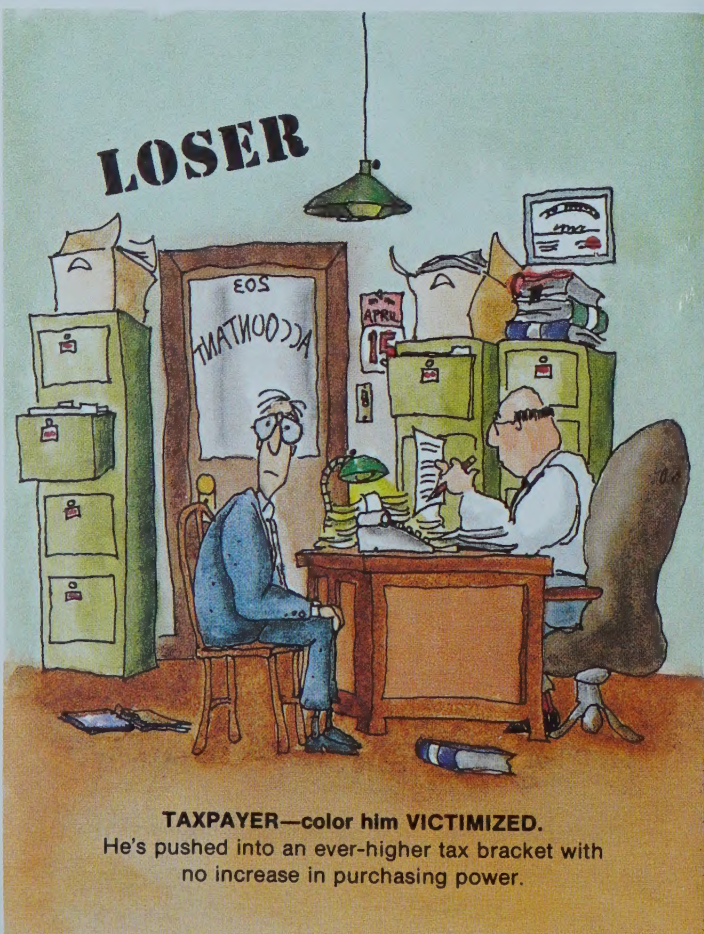
Canadians have not been indifferent to rising prices but neither were most being hurt by them. Some had provision for adjustments to the rise in the cost of living written into their labour contracts. Most government payments of pensions, allowances and other forms of assistance are similarly adjusted. So are income tax payments.

Canadians have had the advantage, too, of subsidies which have held down the cost to them of new housing, of imported oil and of other goods and services. Many costs have been controlled, the cost of rental accommodation, for example, and of utilities. The rise in prices has also been slowed by reductions, or the suspension altogether, of sales taxes.

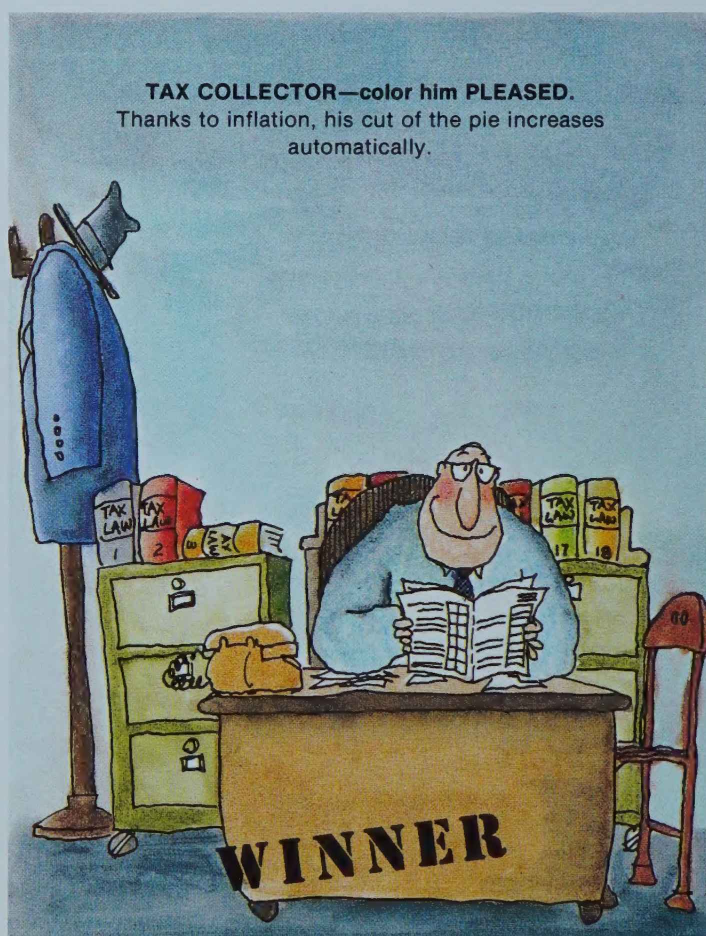
Most of all, the incomes of working Canadians have generally risen more rapidly than their own cost of living *(Fig 1; Fig. 2)*. Hourly wages in manufacturing give an indication of how rapidly: from 1970 to 1977, they rose by an annual average of 10.9 percent compared to the annual average rise of 6.5 percent in cost of living. It didn't matter that inflation halved the value of what the dollar would buy when most Canadians had more than twice as many dollars to spend.

Things are changing

That's changing now. The incomes of Canadians are no longer rising as



TAXPAYER—color him VICTIMIZED.
He's pushed into an ever-higher tax bracket with no increase in purchasing power.



TAX COLLECTOR—color him PLEASED.
Thanks to inflation, his cut of the pie increases automatically.

rapidly as they were. The wage increases negotiated last year were in the 6 to 7 percent range, compared to double that a few years ago. With their cost of living rising by 9 percent, many Canadians are now experiencing a reduction in their real income and are discovering for the first time just what inflation can do to their standard of living.

They're beginning to recognize it now for what it is: a progressively higher tax on their incomes and savings. A cruel tax because it weighs heaviest on those with low or fixed incomes who can least afford to pay it. A tax capable of destroying everything for which they've worked. There was little hope that inflation could be controlled when most Canadians were sheltered from its effects. But now, as more Canadians are exposed to them, there is that hope.

Canada's inflation, as did the inflation in other industrial countries, originated mostly in the belief that if more funds were pumped into the economy, it could be spent into prosperity. So growth in the money supply was speeded to help finance government spending for make-work and other social benefits. But when more money to spend became available faster than the goods and services on which to spend it could be produced, the classic situation was created of too many dollars chasing too few goods, and prices inevitably began to rise.

The growth in money supply has since been slowed; so has the growth in government spending. But neither, some critics complain, is being slowed to the extent that they must be if prices are to soon stabilize. In the meantime, inflation has been fuelled from other sources, not the least being the unrealistic expectations of many Canadians and their governments.

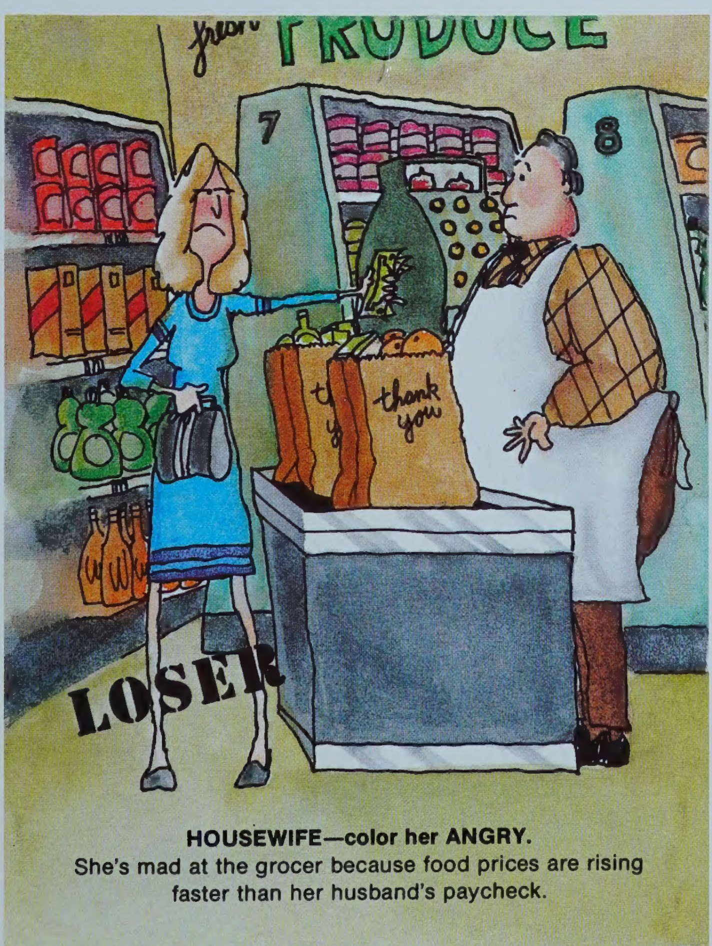
Unrealistic expectations

It is unrealistic, for example, for Canadians to expect to be paid the same wages and salaries as their American counterparts when the value of what they individually produce may be as much as a third less in some industries. Canadians may work as hard as Americans but the smaller Canadian market does not allow the same economies of scale, the same cost-savings from mass production, that the larger American economy provides. Nor does Canada have the same high level of capital invested in more productive tools and machinery.

When insisting that they be paid as much and, in some instances, more than Americans doing the same job, Canadians haven't taken into account the value of that job, as measured in what is produced. The result has been that producers have had to raise their prices to compensate for that lower productivity.

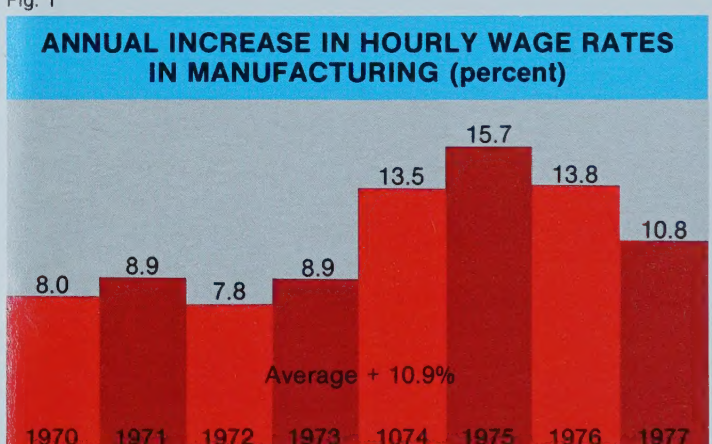
Government has been as unrealistic in another way. It has made Canada's social assistance programs more comprehensive and generous than those of any other western country, more comprehensive and generous than can be financed from tax revenues. Each year, government has had to borrow to pay for them and this, too, has contributed to the rise in costs and the decline in the value of what the dollar will buy.

This is what is meant by living beyond our means even though it is seldom put this way. When the level of wages paid and services provided by government is more than can be supported by the value of what individually and collectively the country is able to produce, the inevitable result is higher prices. We have been producing, in effect, less for more;



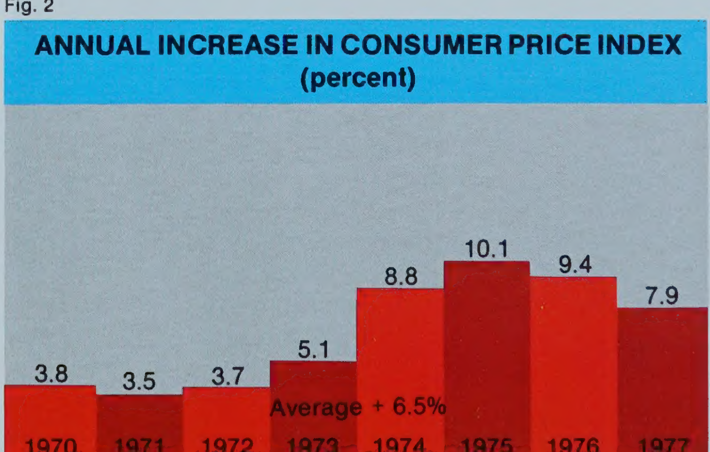
HOUSEWIFE—color her ANGRY.
She's mad at the grocer because food prices are rising faster than her husband's paycheck.

Fig. 1



Source: Bank of Canada Review

Fig. 2



Source: Bank of Canada Review

we must learn again how to produce more for less.

Imports rising

Canadians in recent years have been buying more goods and services from foreigners, mostly because they were cheaper, than they've been selling. So Canada has had a large and still growing deficit in its international transactions *(Fig.3)*. There has been a stronger demand for the U.S. dollar and other foreign currencies, with which to pay for these imports, than there has been foreign demand for the Canadian dollar. So the value of the Canadian dollar has fallen in the foreign exchange market.

That fall last year, it is calculated, added 3 percentage points to the cost of living in Canada as Canadians paid more for foreign goods and services.

The value of the dollar in the foreign exchange market has improved so far this year and it won't make the same contribution to higher Canadian costs that it did last year. But as long as Canadians buy more from foreigners than they sell to them, they will have to pay more and their costs will be correspondingly higher.

The rise in government spending, increases in wages and salaries without supporting increases in productivity, the fall in the value of the Canadian dollar in the foreign exchange market: these make a visible contribution to the rise in the cost of living. A still largely invisible contribution is made by the rising cost of compliance to government regulation.

Regulatory costs

Much of this regulation is necessary and desirable if a clean and healthy environment is to be maintained but even necessary and desirable regulation is often imposed in ways that are more costly than they need to be. At the same time, much regulation is neither necessary nor desirable but still costly.

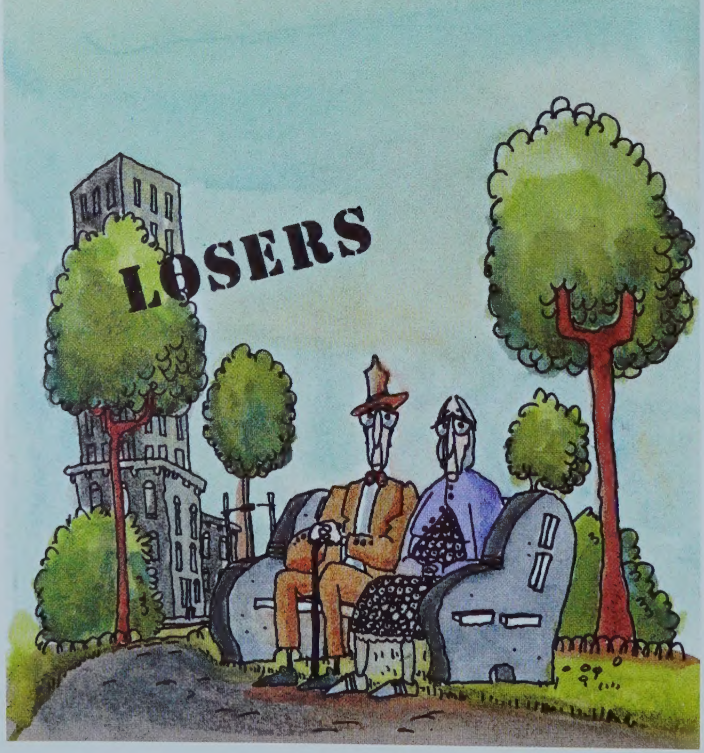
What the cost of compliance to regulation adds to the cost of the operation of a business (a cost that the consumer eventually pays) varies from one business to another. Dow Chemical has found that the cost of compliance with government regulation in its U.S. operations is equivalent to 7 cents of each U.S. sales dollar. Almost half of that added cost, Dow believes, was the result of wasteful and unnecessary regulation.

But whether necessary and efficient in application, or unnecessary and wasteful, compliance with government regulation adds to the final cost to the consumer, a consideration to which many of those who set down the regulations have been indifferent.

The cost of living this year is expected to rise between 8 and 9 percent as these and other inflationary forces continue to press on prices. Next year, though, those inflationary pressures should not be as pronounced if the corrective trends now becoming apparent are sustained. The most important of those trends, of course, is the increase in the value of what Canadians are producing.

Economy expanding

The economy is expanding again but not so rapidly that it will regenerate the same pressures of demand on supply that developed in the early 1970s. There was an increase in the volume of goods and services produced in Canada last year of 3.4 percent. The increase this year should be at least as much and, as business reinvests more of its profit into



ELDERLY—color them BEWILDERED.
Caught between rising prices and fixed income, the elderly are the most defenseless victims of inflation.

GOVERNMENT EMPLOYEE—color him HAPPY AS A CLAM.
Assured of a life-time job, and with his salary and pension pegged to the cost of living, he thinks inflation is just what the country needs.

making itself more efficient, the increase next year could be 4.5 percent.

An increase in the volume of what Canada produces will not, by itself, contribute significantly to more stable prices. Stable prices depend upon the extent to which increased value can be imparted to what is produced without increasing its cost. Canada's productivity, as measured by the volume of what has been produced per worker, has risen only 1 to 2 percent a year over the last two years. But as more is invested in new and more efficient production tools, productivity will increase at a faster rate.

Canada is fortunate in its possession of every form of energy. It is self-sufficient in all except oil but that is, at worst, a temporary condition and can be corrected within a very few years. Nothing will do more to assure Canada's continuing economic growth than the security of its energy supplies.

Pitfalls ahead

There does remain the danger, however, that the persistence of inflation will encourage Canadians to pursue the wrong ways to protect themselves against it.

The reimposition of controls on wages, prices and profits would be one wrong way. Controls do not correct the causes of inflation; they temporarily confine the effects of it. What is worse, they impose a rigidity upon the economy which prevents it from working out solutions to inflation where those solutions are within its reach.

Cost of living adjustments in labor contracts and other forms of accommodation for rising prices do nothing to discourage thier rise. They have instead the opposite effect of implicity encouraging prices to keep on rising. There is, in fact, no permanent protection against inflation other than putting an end to it.

Canada's inflation, in perspective, is the bill Canadians have incurred by insisting upon a standard of living which they have not been productive enough to afford. The size of our domestic liabilities is measurable in the increase in the national debt which has doubled within the last 5 years[2]. The size of our foreign liabilities is measurable in our international deficit which will exceed $6 billion this year.

Both are measurable together in the decline in the value of what the dollar now buys, a decline which for an increasing number of Canadians represents a decline in their real income. Increasing that income won't now help; it will instead regenerate inflation at present or higher levels.

Inflation can only be brought under control (which is another way of saying value can only be restored to what the dollar will buy) by putting more value into what we produce. By becoming more productive. That is the goal towards which monetary and fiscal policies, towards which the management of the economy, must be directed. It is the standard against which every government expenditure and every wage claim should be measured.

Canada is moving in the right direction to achieve this but, with the right encouragement, it can move faster than it is. □

[2]As of 1973, the Federal Government had outstanding $29.7 billion debt payable in Canadian funds. As of 1978, it had outstanding $60.9 billion of debt (Canadian funds), according to the Bank of Canada Review. These borrowings by the Federal Government constitute the national debt.

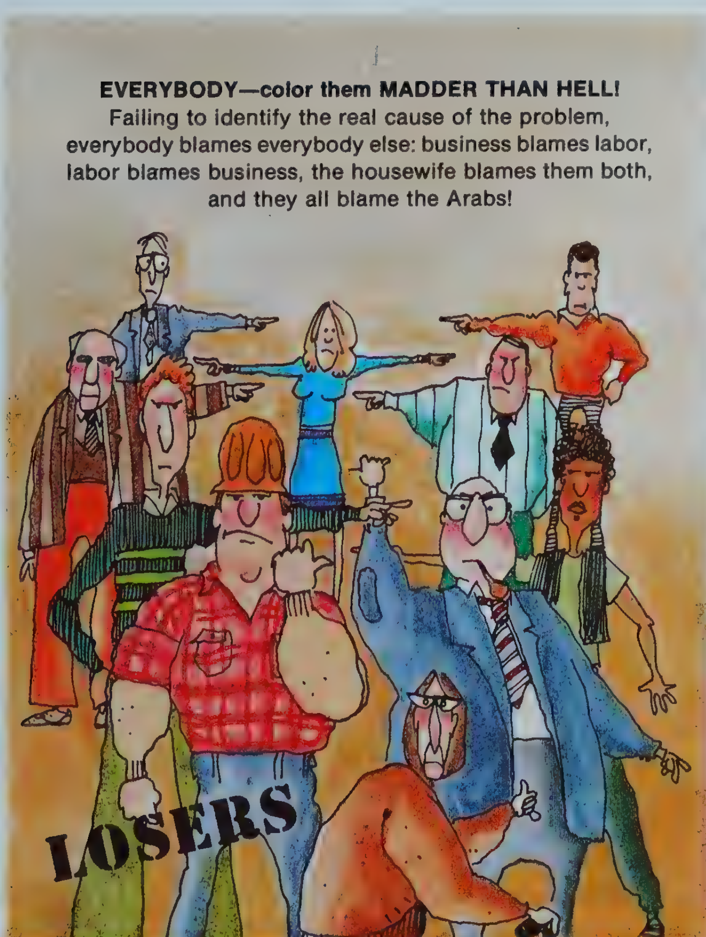
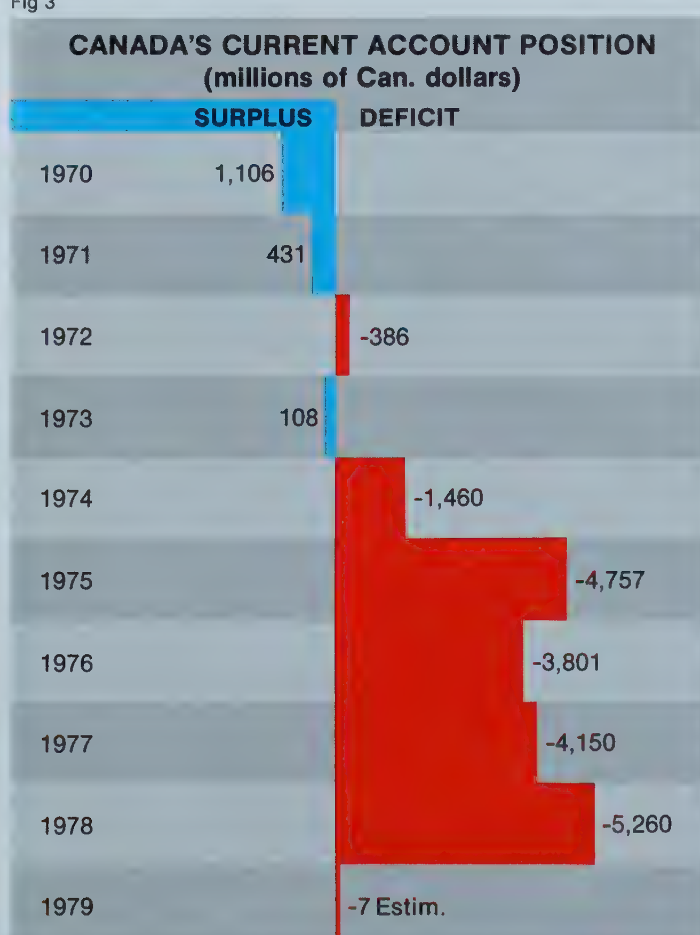


Fig 3



Source: Bank of Canada Review

FREE ENTERPRISE SYSTEM

Tom Smith and his incredible bread machine

by R.W. Grant[1]

This is a legend of success and plunder
And a man, Tom Smith, who squelched world hunger.
Now, Smith, an inventor, had specialized
In toys. So, people were suprised
When they found that he instead
Of making toys, was BAKING BREAD!

The way to make bread he'd conceived
Cost less than people could believe.
And not just make it! This device
Could, in addition, wrap and slice!
The price per loaf, one loaf or many:
The miniscule sum of under a penny.

Can you imagine what this meant?
Can you comprehend the consequent?
The first time yet the world well fed!
And all because of Tom Smith's bread.

A citation from the President
For Smith's amazing bread.
This and other honors too
Were heaped upon his head.

But isn't it a wondrous thing
How quickly fame is flown?
Smith, the hero of today —
Tomorrow, scarcely known.

Yes, the fickle years passed by;
Smith was a millionaire,
But Smith himself was now forgot —
Though bread was everywhere.
People, asked from where it came,
Would very seldom know.
They would simply eat and ask,
"Was not it always so?"

However, Smith cared not a bit,
For millions ate his bread,
And "Everything is fine," thought he,
"I am rich and they are fed!"

Everything was fine, he thought?
He reckoned not with fate.

Note the sequence of events
Starting on the date
On which the business tax went up.
Then, to a slight extent,
The price on every loaf rose too:
Up to one full cent!

"What's going on?" the public cried,
"He's guilty of pure plunder.
He has no right to get so rich
On other people's hunger!"

(A prize cartoon depicted Smith
With fat and drooping jowls
Snatching bread from hungry babes
Indifferent to their howls!)

Well, since the Public does come first,
It could not be denied
That in matters such as this,
The Public must decide.
So, antitrust now took a hand.
Of course, it was appalled
At what it found was going on.
The "bread trust," it was called.

Now this was getting serious.
So Smith felt that he must
have a friendly interview
With the men in antitrust.
So, hat in hand, he went to them.

They'd surely been misled;
No rule of law had he defied.
But then their lawyer said:

"The rule of law, in complex times,
Has proved itself deficient.
We much prefer the rule of men!
It's vastly more efficient.
Now, let me state the present rules,"
The lawyer then went on,
"These very simple guidelines
You can rely upon:
You're gouging on your prices if
You charge more than the rest.
But it's unfair competition
If you think you can charge less.

"A second point that we would make
To help avoid confusion:
Don't try to charge the same amount:
That would be collusion!
You must compete. But not too much,
For if you do, you see,
Then the market would be yours —
And that's monopoly!"

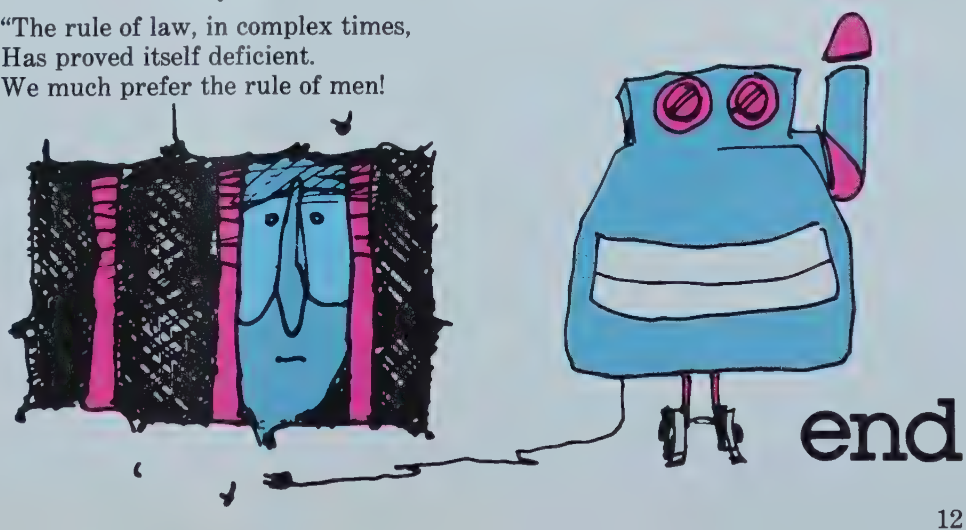
Price too high? Or price too low?
Now, which charge did they make?
Well, they weren't loath to charging both
With Public Good at stake!

In fact, they went one better —
They charged "monopoly!"
No muss, no fuss, oh woe is us,
Egad, they charged all three!

"Five years in jail," the judge then said.
"You're lucky it's not worse.
Robber Barons must be taught
Society Comes First!"

Now, bread is baked by government.
And as might be expected,
Everything is well controlled;
The public well protected.

True, loaves cost a dollar each.
But our leaders do their best.
The selling price is half a cent.
(Taxes pay the rest!) □



[1] *Mr. Grant is an engineer with the Space & Communications Division of Hughes Aircraft in California. The poem is Copyright 1966 by R.W. Grant. Excerpts from the original reprinted here with permission of the author.*

The illustration for this poem is reproduced with the kind permission of World Research, Inc., Campus Studies Institute Division, of San Diego, California, who are the publishers of an incisive paperback not surprisingly called "The Incredible Bread Machine". Written by six authors all under 27 years, it comes up with some telling answers about how the free market system works and how intervention has fouled the works. The authors see capitalism as "the incredible bread machine" and government intervention, from credit expansion to price controls, as a "no dough" policy. A highly readable, entertaining book written with simple, "cool" and precise reason.

Insight Edition *readers may obtain a complimentary copy (as long as our supply lasts) of this paperback by writing to The Editor of this publication.*

Price and wage controls through history

"The only thing we learn from history is that we do not learn from history."

by Robert L. Scheuttinger[1]

The idea that there is a "just and fair" price for a certain good or a certain kind of labor which can and should be enforced by government is as old as civilization. For the past forty-six centuries and then some, governments have periodically tried to control wages and prices. The intention: to replace the natural laws of supply and demand with man's superior judgment of what a "proper" supply and "proper" demand ought to be. Usually, history indicates, the efforts have failed, and governments then put the blame on the "wickedness" of their subjects.

The "planning" cycle

The passion for economic planning regularly appears in every generation and, following several years of "experimentation", is discarded. The pattern appears to be fairly stable: first, grandiose plans for the regulation of investment, wages, prices and production are unveiled with much fanfare and anticipation, reality intercedes and the plans are modified, then drastically altered, and finally permitted to dwindle and perish. Every decade or so, says Professor John Jekes of Oxford, the old plans are dusted off, centralized planning is again instigated and the process repeats itself.

The record of government attempts to control wages and prices is clear. Such efforts have been made in one form or another periodically in almost all times and all places since the very beginning of organized society and invariably have failed to achieve their announced purposes. Time after time historians have laconically concluded "... the plan to control rising prices failed utterly," or "... the laws were soon repealed since no one paid any attention to them."

Often they have had side effects. Many rulers have been forced to resign, abdicate or commit suicide because of their unexpected consequences. Many governments have fallen. Inflation has often jumped 100 or 500 times after they were introduced. Unemployment and bankruptcies have followed in their wake. Totalitarian regimes when led by men ruthless enough, have been temporarily strengthened through controls over people's livelihoods.

Long before Christ

In Babylon, about 4,000 years ago, the Code of Hammurabi imposed a rigid system of controls over wages and prices which blanketed production and distribution. The result: smothered economic progress for centuries. In ancient Egypt, government controls over the grain crop led gradually to ownership of all the land by the state. In China, in Greece and Rome various kinds of regulations over the economy were tried and usually either failed completely or produced harmful effects. One of the best known cases of wage and price controls in the ancient world occurred in the time of the Emperor Diocletian. Thousands of people throughout the Empire were put to death before these futile laws were finally repealed.

In the Middle Ages, the city of Antwerp fell to the Spanish largely because no one would risk bringing food to the beseiged city if he could not obtain the market price once he had passed by the Spanish guns.

In 1770 the rice crop failed in India and one third of the population died. A number of scholars attribute this to a lack of rationing resulting from government determination to levy low prices on available grain. There were more crop failures in 1886 but this time the government permitted the free market to function and the shortage was kept under control.

Throughout the twenty months between May 1793 and December 1794, the Revolutionary Government of the new French Republic tried nearly every known experiment in wage and price controls.

A large black market blossomed and butter, eggs and meat were sold door to door, primarily to the rich. Inevitably, the wealthy were ensured of food, while the poor were denied it. There was famine in the midst of abundance. Many areas of France repealed the law by popular vote without waiting for the national government and by December 1794, the Convention officially repealed the controls.

In the American colonies, frequent attempts were made to keep down the price of beaverskins and such commodities. All failed. Indians as well as the European colonists insisted on market prices for their goods and labor.

Reverse effect

During the American War of Independence, Washington's army nearly starved at Valley Forge largely due to what John Adams called "That improvident Act for limiting prices which has done great injury, and which in my sincere opinion, if not repealed will ruin the state and introduce a civil war." As one economic historian, Albert Bolles, explained, "The regulation of prices by law had precisely the opposite effect to that intended; for prices were increased rather than diminished by the adoption of the measure."

With the coming of the Revolution in France, successive governments still failed to learn from experience. A series of so-called "Maximum Price" laws were passed and all proved ineffectual. We are told that in Paris of 1794 one observer reported that "one hundred and fifty women had crowded up to a butcher's door at four o'clock in the morning. They screamed out that it was better to pay twenty or thirty sous and have what they wanted than to pay

[1]*This article is a summary of a paper by Robert L. Scheuttinger written originally for the Heritage Foundation, Inc., Washington, D.C., in March 1974. In our post-controls period, his words are as apt today as they were then. Mr. Scheuttinger studied under Frederich A. von Hayek at the University of Chicago and under Sir Isaiah Berlin, O.M., at Oxford University. He taught at the Catholic University of America, The New School for Social Research, and the University of St. Andrews. He was also visiting lecturer in Political Science at Davenport College, Yale University, in 1974. He is the editor of* The Conservative Tradition in European Thought *and author of* Lord Action: Historian of Liberty.

fourteen, the maximum price, and get nothing."

In the nineteenth century the western world was blessed by a happy period of relative peace and prosperity. For 100 years no major wars were fought by the European Powers and the principles of free trade reached their ascendancy.

World War I

With the breakdown of the structure of peace in 1914, however, both the Allies and the Central Powers insisted on returning to the drawing board with entirely predictable results. Even in the Organized State par excellence (the Kaiser's Germany) economists pronounced price and wage controls to be ineffective. No other nation, democracy or dictatorship, monarchy or republic, managed to make them work.

The sudden upsurge in government demands for supplies coupled with immediate shortages caused by the German submarine fleet drove prices in Britain far above pre-war levels. Individuals became accustomed to relying upon government for achievements best left to individual initiative and the free market. Regulating to a low price rule in a time of increasing demand and diminishing supply results in inconvenience and disappointment. Many people too, are led to believe that high prices are caused by unseen manipulations with the result that stricter controls and more government intervention is requested.

Economically, the *Spectator* and other journals pointed out, in a time of increasing demand/decreasing supply, high prices are necessary to act as a rationing system which not only checks consumption but also channels goods into areas where they can be used more productively. Waste is reduced and higher prices stimulate production and importation. In short, they recommended a free-price system to solve the economic problems.

In the words of a Canadian economist, W.C. Clark, who examined control systems in Great Britain, France, Germany, the United States and Australia during this period, "the policy of fixing maximum prices . . . fails to accomplish the objectives sought". Further: it incurs a "multitude of unforeseen consequences which are frequently worse than the original evils".

World War II

During the Second World War and shortly thereafter price and wage controls once again were resorted to by the major nations. Although a supreme patriotic effort in several nations (including the United States) slowed the official rise in wages and prices a bit, it is probable that the real prices and wages were little affected. Besides a thriving black market, reduction in quality of goods and increased "prerequisites for jobs" (fringe benefits, overtime, etc.) all contributed toward a double system, the "official" — controlled prices and wages — and the "unofficial" — real prices and wages.

Even the defenders of wage and price controls recognize that they result in distortions in the use of economic resources, add heavy extra costs and at least may still fail to reduce inflation.

Control people's lives

While a prisoner of war in 1946, Goering warned a U.S. war correspondent that America was doing many things in the economic field which he had found were detrimental to Germany. "You are trying to control people's lives. And no country can do that part way. I tried and failed. Nor can a country do it all the way. I tried that too and it failed. I should think your economists would read what happened here . . .

"Will it be, as it always had been," asked Goering, echoing the familiar refrain, "that countries will not learn from the mistakes of others and will continue to make the mistakes of others all over, again and again?"

In Britain in 1952, the Chairman of Lloyds Bank wrote: "There can be no dispute about the efficiency of a properly working price system . . . Rationing and controls are merely methods of organizing scarcity; the price system automatically works towards overcoming it. If a commodity is in short supply a price rise does not simply reduce demand, it also stimulates an increase in its supply. The price system then, stands in direct contrast to rationing and controls which . . . make it less profitable or less attractive in other ways to engage in essential production rather than produce inessentials, left uncontrolled.

Uncertainty, hesitation

Most economists would agree that controls of this sort produce uncertainty and hesitation. Many businessmen hold back and fail to expand into new areas and add new employees because they are not sure what the government will regulate next. Controls also cost millions of man-hours in both government and industry; the great expense of administering countless regulations (if we assume their effect is negligible or negative) must be recorded as colossal waste. As profits approach legal ceilings, businessmen have less reason to keep down costs; this also leads to waste of valuable resources. Employees are not stimulated to do their work or to seek a better job and employers are restrained from securing as many and as highly skilled workers as they could productively use.

Although many economists would concede that government controls are able to restrain prices for very short periods of time (by so-called "freezes") the end result is that pent-up inflation bursts at the first opportunity, giving rise to even higher prices in the long run.

Liberty in jeopardy

In addition to the many economic difficulties which cannot be dismissed with such quips as Lord Keynes' dictum that "in the long run we are all dead", there remains an underlying moral problem. The government of the United States was scarcely a year old when a writer in *The Connecticut Courant* asserted that "the scheme of supporting the money and regulating the price of things by penal statutes . . . always had and ever will be impracticable in a free country, because no law can be framed to limit a man in the purchase or disposal of property, but what must infringe those principles of liberty for which we are gloriously fighting."

If a historian were to sum up what we have learned from the long history of wage and price controls in this country and in many others around the world, he would have to conclude that the only thing we learn from history is that we do not learn from history.

As America's first economist, Pelatiah Webster, observed when describing the effects of the unhappy experience with economic controls during the War of Independence, "It seemed to be a kind of obstinate delirium, totally deaf to every argument drawn from justice and right, from its natural tendency and mischief, from common sense and even from common safety . . . It is not more absurd to attempt to impel faith into the heart of an unbeliever by fire and fagot, or to whip love into your mistress with a cowskin, than to force value or credit into your money by penal laws." □

OPINION

We must encourage more risk-taking in Canada

"... rising productivity in our country is the key to improved international competitiveness in world markets and in the Canadian market."

by Andrew G. Kniewasser[1]

Contrary to conventional wisdom, Canadians are good savers and good risk-takers. The problem has been and remains that the fiscal and tax framework within which individuals and corporations make investment decisions has not sufficiently encouraged Canadians to commit a large percentage of their savings to risk, that is the equity capital ownership in Canadian business. Savings have been mainly directed to short-term deposits or to other readily cashable interest bearing instruments.

Again, contrary to conventional wisdom, the consensus in the international business and investment communities is that the future for this country is really very promising. That assessment should be the basis in our consideration of risk-taking in Canada. We appear to be in a strange situation in Canada where the international investment community is more optimistic about our prospects than many of our own people.

There is a good deal of hard evidence to support a more sanguine view of our prospects than that held by some Canadians. Throughout 1977 and 1978, we have made real progress in restoring the competitiveness of Canadian employment for national and international markets. There is now a consensus in Canada that total government spending must progressively decline each year as a percentage of our gross national product and that it is absolutely essential to free up resources for new productive investment in the private sector.

Total government expenditures are indeed declining as a percentage of GNP for the first time in many years. Business confidence has strenghthened and, that excellent indicator of investor confidence, the Canadian stock market, has out-performed stock markets in any country in the world over the past 12 months.

The role of capital

The starting point in thinking about Canada and how to make our economy work better is, of course, capital. It is quite clear that rising productivity in our country is the key to improved international competitiveness in world markets and in the Canadian market. Improving international competitiveness means more sales, more output, more jobs, less inflation, a stronger currency and a greater capacity to pay for a wide range of social programs and services which are now in place in Canada.

The main determinant of improved productivity is the extent to which we apply capital to our production resources. The consequences are quite clear — we must do a better job in Canada of applying capital to production plant. This must be the heart of our economic strategy.

The fundamental cause of economic under-performance in Canada in recent years, the fundamental cause of unacceptable levels of unemployment and inflation, has been substantial under-investment in new productive business facilities. That is the lesson of the 1970s. Let us not make the same mistake in the 1980s.

Dependency on capital

Although our economic performance in recent years has been far from optimum, we still have a very high standard of living in Canada by international standards. The reason, of course, is that we have been relatively successful for many years in applying capital to economic processes. Some 23 percent of all money spent on goods and services in Canada last year was allotted to capital investment. Comparable figures for the United States are 16 percent, Britain 19 percent, France 23 percent, Germany 21 percent and Japan 30 percent.

The Japanese have it right. They say that good economic performance is much more a question of working smarter than working harder. It is a question of applying capital and technology to economic processes.

There is now, I believe, a consensus in Canada that money for investment as a percentage of gross national expendi-

[1]Mr. Kniewasser is president of the Investment Dealers Association of Canada. This article is a condensation of an address he gave at the March 14, 1979, meeting of the Kiwanis Club of Toronto. Born in Ottawa, Mr. Kniewasser holds a B.A. (Honors Economics) from Queen's University. He is a director of the Atlantic Council of Canada, the Canadian Club Toronto, and the Queen Elizabeth Hospital in Toronto. his thirty-year career embraces numerous senior posts in the federal government service as economist, trade commissioner, commercial secretary, executive assistant, commercial counsellor, senior assistant deputy minister, and general manager of Expo 67.

ture in this country will have to rise from the present 23 percent to close to 26 percent during the 1980's, an unprecedented investment performance and, of course, a major reason why we must encourage more risk-taking.

Allocation of capital

It is not good enough just to attract a lot of savings and then spread them out across the investment scene. Savings must be invested in the most productive way and in forms which facilitate the establishment of new enterprises and the expansion of existing ones.

For example, last year we raised an unprecedented $33 billion in new financing through Canadian securities markets, $27 billion of this from Canadians and $6 billion from non-residents. The allocation of this capital was 70 percent to finance the three levels of government, 27 percent in the form of corporate debt and preferred shares, and only 3 percent to new permanent equity financing, that is to say to risk capital. Ten years ago we managed a much more efficient allocation of capital and were able to get some 10 percent of the flow of funds through securities markets into new equity.

So, in Canada we have had for some years serious problems of underinvestment in productive facilities and serious problems of insufficient flow of funds to new equity financing. We have been misallocating capital.

In the Canadian situation, equity capital is the key component. In many ways, it is like the foundation on which any building rests. Equity capital is the permanent base to which one can add successive layers of debt and then at a certain point the base must be reinforced by investing more equity before more debt can be added to the structure.

We have been in a situation in Canada for some years of not being able to attract sufficient equity to launch new enterprises or to expand existing ones and, as a result, business expansion has been held back.

Circumstances are now right for our country to get on with risk-taking. More equity investment is the key to our economic performance. *We should be making new efforts to remove the deterrents to risk-taking in the tax system.*

Total capital requirements for the 1979-1980 period are estimated to be in the order of $1.26 trillion — that means over $100 billion in new financing on average each year for the next twelve years.

These are unprecedented figures. This is what we will have to achieve just to meet the objective of an annual growth rate of 4 percent in real terms and an annual inflation rate of not more than 5½ percent during the 1980s. These are moderate assumptions about real growth and inflation. We could do better if we wanted to and were sufficiently determined to get more capital in the right place.

Unprecedented new equity financing is, of course, the base from which these massive new investments must be financed. Our first priority must be to get the equity base in place and then add debt in various forms.

Sources of financing

There is only one source of new investment resources in this country, or any other country, and that, of course, is real savings, the difference between output and consumption, plus investments from other countries. An essen*tial strategy for Canada must be strong incentives to savings: personal, business and government.* We must put in place policies to encourage savings by individuals, business and governments in Canada and policies designed to attract savings from non-residents: not savings for ultimate security, but investments to provide dynamic economic returns.

Looking ahead, it would appear that our present strategies are essentially right. We will be able to finance most of this program in Canada — 60 percent from business savings, 25 percent from personal savings and perhaps 9 percent from government savings, mainly crown corporations. This would mean that some 6 percent of the funds required would have to come from non-residents, a ratio which is manageable and not unusual by Canadian standards.

In this situation, the role of personal savings and personal investment is particularly critical. Personal savings have a dynamic role to play because they become available to all prospective users who bid for them through our capital market system. Personal savings flow into the market to seek maximum returns in the market and are consequently allocated to the most prospectively rewarding investment wherever it may be in our country. Corporate savings and government savings, if any, tend to remain within the enterprise originating them and are used for the expansion of that enterprise. They lack the flexibility of personal savings, which seek effective allocations through the market system in a much freer way.

How to encourage risk-taking in Canada

Let me put in point form how we must encourage risk-taking:

(1) Ensure that each year total government expenditures expressed as a percentage of the gross national product decline. They are declining now for the first time in decades, but we must make further progress in this direction to free up the capital we so urgently require for new productive investment.

(2) Pursue monetary and fiscal policies which will contain inflation and encourage savings. Risk and equity investment cannot be vigorous under conditions of substantial inflation.

(3) Ensure that demands on the economy for increased income relate to increases in productivity. If they exceed real growth, the consequence is immediately more inflation, less international competitiveness, less employment and less capacity to generate new real capital.

(4) Encourage savings (personal and corporate) by reducing taxes as diligently and realistically as possible. The only source of capital is saving, and we will not get on with the application of capital to economic processes in our country if rates of taxation, personal and corporate, impair a growing pool of savings to finance productive investment.

(5) Encourage risk-taking in equity shares and equity positions in business by removing as soon as possible the present deterrents which still exist in our tax system. They include:

(a) The capital gains tax;

(b) Double taxation of dividends. Dividends are the return on the investor's equity. They are taxed twice, but interest, the return to debt, is taxed only once;

(c) Introduce current value accounting into the tax system so that taxes are based on real income rather than artificial income from inflation;

(d) Encourage, through the tax system and in every possible way, individual Canadians to save and invest in the future of this country. The propensity to risk-taking is much higher for individuals than for institutions. It is also more decentralized. The savings

and investment process in Canada is not nearly as institutionalized as in most countries of the world, but we should be careful in introducing any further incentives to institutionalization which tend to concentrate the allocation of savings to a limited range of low risk securities.

Conclusion

I am pleased to report that in Canada we are making progress on all of these points right now and I am also pleased to report that this progress has little to do with partisan politics. All levels of government in Canada are proceeding this way. Indeed, I doubt if many people can henceforth get elected in this country if he or she did not fully endorse good market oriented economic management as good practical politics.

What is required for you and for me, and for the investment community, is that we become very effective in making it quite clear to citizens and to politicians that all of us insist on good economic management and are expecting more encouragement to risk-taking in new productive facilities in our country. We should not under-estimate the consequences in a free, democratic society of any weakening in the consensus on these matters that we have now achieved. *We must not take this country for granted and we should be working away to strengthen notions of personal responsibility, confidence and intelligent risk-taking.*

I conclude that we will engage in intelligent risk-taking and that the 1980s will be the best decade yet for our country. □

Letters *continued from page 1.*

alarm. I cannot stress too much the extensive time needed, nor the difficulty, for proper and accurate interpretation of raw scientific data. The scientific community is well aware, and exceedingly suspicious, of quick and superficial conclusions drawn without adequate study.

Your 1970 article in toto, therefore, appeared to us to contain some "conclusions" which had not been conclusively scientifically proven. My use of the term "speculative" in the Insight Edition article was in the scientific context, not at all intended to reflect negatively upon Mr. Bell's journalistic ability or the reputation of your newspaper.

(**Ed. Note:** Then Mr. Heine replied to Dr. Young's letter. Heine's "last word" follows. Their exchange concluded too late to meet our April '78 issue deadline.)

With respect, I do not share your view that it is desirable in such circumstances to wait for "conclusive scientific research . . . to properly interpret . . . actual hazard . . ." There are many cripples from Minamata Disease in Japan who got that way while waiting for conclusive scientific evidence of what was causing their problem.

However, I accept you are as entitled to your version of the circumstances surrounding the information being made available to the public as we are to ours.

I still look forward to seeing my letter, your response and this further response in your publication.

William C. Heine

* * *

Book offer popular

I recently came upon and read a copy of your April '79 issue and would very much appreciate being placed on your mailing list. I particularly enjoyed the article by Dr. Elizabeth Whelan. If you still have copies of her book "Panic In The Pantry" I would certainly like to receive one.

John L. McDougall, Ottawa

(**Ed. Note:** We had over 125 reader requests for copies of Dr. Whelan's book, as of this writing, and we are still receiving them. Our stock has now been replenished and we apologize to those who had to wait some weeks for their copy. Reader interest exceeded our expectations.)

* * *

I am a qualified dietitian formerly in the RCAF, have raised a family, and taught home economics for quite a few years. I am now retired from all that. I write a nutrition column for our local newspaper and am very active in nutrition work in the community. We have a real problem in trying to overcome the immense propaganda put out by some individuals and organizations regarding food additives, diet fads, and so on. A complimentary copy of the book "Panic In The Pantry" would be of considerable help.

Mrs. Katherine J. Lowe
Fort Francis, Ont.

* * *

Cholesterol question raised

Your article on nutrition in the April '79 issue contained a wealth of information that appears to be a good summary of present knowledge in most cases. However, on page 5 under the cholesterol issue, there does appear to be some problem. The conclusions on the positive relationship of high blood cholesterol levels to diet seem much to simplistic. If the case were as stated in that article then surely we would not have the problem that we have today and would have been able to lower the blood cholesterol in those having high blood cholesterol simply with diet. This is not the case to my understanding and there certainly is much more information and much more controversy than was shown. (Perhaps) this is a problem with the one who condensed the original article by Dr. Whelan.

D.H. Conrad, Poultry Specialist
Saskatchewan Agriculture
Veterinary Services Branch

(**Ed. Note:** This reader's letter was forwarded to Dr. Whelan and she responded as follows: "Your statement that the article oversimplified the cholesterol/heart disease problem was certainly legitimate. Indeed, if I were rewriting such an article now (it was originally written some time ago) I would change the text considerably. My change of view is the result of an intensive literature review now being conducted by the American Council on Science and Health. We will be releasing our position paper this Fall and will be sure to send you a summary."

Dr. Whelan is executive director of A.C.S.H. When their position paper is released, we will publish it in *Insight Edition* so that our readers will have the latest information available on this subject.)

* * *

Free speech advocate

Like many others I did not request that your publication be sent to me. However, as a firm believer in free speech and the expression of honest opinions, I felt duty-bound to at least examine the case for the chemical industry or at least Dow. It is eminently clear to me now (as before) that *Insight* is nothing more or less than an advertising and propaganda organ and that I am unlikely to find any genuinely useful information in it. Your theme is obvious: allow the chemical industry to do whatever it will and all will be well. Your track record hardly encourages this optimistic belief. Therefore, kindly remove my name from your mailing list. I shall obtain my information about your industry from less self-interested sources in the future as in the past.

George Shane, Toronto

(**Ed. Note:** We have removed your name as requested. Other readers will be interested to know that we have received about 30 "removal" requests in 18

months. Our circulation is about 26,000 per issue. Over 90% of our reader mail (average 150 letters/issue) is encouraging).

* * *

Kudos sampler

It is with great interest that I read your last volume of *Insight Edition*. This publication is full of useful and informative material for all chemists. I would greatly appreciate your placing my name on your mailing list, and also to receive back issues of this intelligent publication.

Gilles Drapeau, M. Sc., Biochemist
Centre Hospitalier Universitaire
Sherbrooke, P.Q.

* * *

I was very impressed by the articles presented in your April '79 *Insight Edition*. Some were outside of my field yet I read them with interest. Keep up the good work.

W.D. Powrie, Prof. and Chairman
Dept. of Food Science, Univ. of B.C.
Vancouver, B.C.

* * *

You are doing an excellent job!

F.W.B. Einstein, Prof. of Chemistry
Simon Fraser University, Burnaby, B.C.

* * *

I really enjoyed your magazine, primarily because it expressed views and ideas rarely seen in the daily newspapers. Please put me on your mailing list and keep up the good work.

Cheris Pattie, Camrose, Alberta

* * *

Logic in question

As a plant physiologist I have been working in the field of plant growth regulators and herbicides for many years. Like all others working in the same area I am frequently put on the defensive by statements made by people, many of whom have the sort of mentality which can extol the virtues of organic gardening (because it is done without chemicals) and hydroponics at the same time.

C.G. Waywell, Associate Prof.
University of Guelph, Dept. of
Horticultural Science

* * *

LIFESTYLE: CHEMICAL STYLE

The magic oil barrel

Imagine a barrel, a barrel containing 100 gallons of crude oil. Now imagine it's a magic barrel, and standing over it is — what else? — a magician, pulling out an amazing array of articles.

For instance:

Forty-six white shirts (65 percent polyester), 13 garbage cans, 46 sweaters, 365 ladies' lingerie, two tires, nearly eight tire tubes and 23 pounds of filler equivalent to four and a half auto tires.

And for good measure almost enough fuel gas to last an average household 30 days.

Our magician aims to please, though, and on demand, instead of the garbage cans, he could pull out of his barrel 40 buckets, or 1,155 feet of home water pipe or 8,800 square feet of film sheets. Instead of sweaters, he will gladly give us 11 blankets or 66 rolls of cord. Rather than lingerie, the ladies might want 910 pairs of nylon pantyhose — or nine 16-inch television cabinets. Rather than tires for our autos, we may want 27 tires for our bicycles and 35 tubes for those tires.

A real, not magical, industry

Quite an act, but the barrel isn't magic, of course, and the magician is a very real, productive and innovative chemical industry that can extract all those products by taking 53 of the gallons in a real barrel and sending them through some complex processes to produce intermediate and end products that make up much of the modern world.

Let's take our hypothetical refining situation again and say that the 100 gallons of crude, approximately 3 barrels, are worth $54. By the time the chemical industry and other fabricators finish their work, the value of the 53 gallons of crude has zoomed from $29.00 to $26,000.00 worth of finished products.

Put another way, one analyst recently estimated that there are over 400,000 people working in the North American petrochemical industry. They provide over 1,000,000 jobs in basic industries that are chemically related — synthetic fibers, synthetic rubber, for example. In turn, four to 10 million people are at work using the materials to make the things we, the consumer use.

But there is another way the chemical industry adds value to oil. It builds in some permanence. When crude oil is refined into fuel and then burned — it's gone. The petrochemical industry, on the other hand, turns the crude into objects, some of them seemingly as permanent as man can make them, some semipermanent and some ephemeral — those pantyhose, for instance.

Some articles can be recycled. The tire mentioned earlier must be replaced, but what's left can be recycled and used as an additive for asphalt filler or filled with concrete to become part of a reef or breakwater, thus adding miles to a tire's life.

Reconverting plastics

Even plastics, needn't become litter in perpetuity or thrown onto an ever-growing waste pile. It seems certain now that a way will be found to degrade plastics so that the energy locked inside will be set free and converted to our use after years and years of other uses made possible by the chemical industry.

Almost half of any crude oil barrel refined in Canada goes for the production of gasoline. Five percent goes for jet fuel and another 36 percent becomes middle distillates — home heating oil, diesel fuel, kerosene, and heavy fuel oils.

How much for the chemical industry? Only three to five percent.

Using the chemical industry's share

And how important is it that the chemical industry get this rather small share of the oil barrel?

The plastics industry is dependent virtually entirely on petrochemicals. More than half the fibers for everything from carpets to coats come from petrochemicals, as well as 80 percent of our rubber. The Aspirin brand tablet, the glorifying shampoo, soaps and detergents are all chemical products. Half the fertilizer that increase's the world's crop yield comes from petroleum and natural gas. □

What price environmental purity?

"Zero discharge" is an expression beloved by environmental puritans. It has a nice, crisp ring to it. It's easy to spell and short enough to write on a political placard. Obviously, those who propagate this concept do not understand the implications of zero. Our environmental policy makers don't understand it either. For example, the 1978 Great Lakes Water Quality Agreement objective for "unspecified organic compounds" which are persistent and likely to be toxic is that their concentration in water or aquatic organisms should be "less than detection levels as determined by the *best scientific methodology available.*" The italics are mine.

Our ability to detect trace contaminants will always exceed our ability to remove them. In the laboratory we can expose a minute quantity of sample to the most powerful technological advanced analytical hardware without regard for cost, time or energy consumption. This high technology is not available to the plant engineer, who is limited to practical cost-effective ways of removing contaminants from process effluents.

As analytical capability improves, we shall find that everything is contaminated by an ever-so-small amount of everything else, a point appreciated by Shakespeare when he wrote:

> "But no perfection is so absolute
> That some impurity doth pollute."

Environmental quality objectives should be expressed as some fraction of the level at which environmental damage is likely to occur. The pursuit of purity for its own sake is a gross misapplication of funds and effort. The very process of pollution control itself produces pollution. We cannot destroy matter; we can only convert it into a more acceptable manageable form.

Are the benefits worth the cost?

Consider how we control other risks to public health and safety.

We accept a certain number of traffic accidents, drownings, burglaries, fires, plane crashes and work-related accidents as the inevitable by-product of the lifestyle we have chosen. Some of these hazards we can avoid by adopting a cautious, conservative lifestyle. But we have to accept the risk of being run over because we need to cross the street.

In principle, we could eliminate some of these hazards, but the social and economic cost is more than we are prepared to pay. We could eliminate crime, for example, by having a police officer at every street corner, but the tax burden would be staggering. So we compromise.

The same strategy is adopted when a public hazard arises from the activities and products of private industry. Consider the automobile. We could virtually eliminate traffic deaths by instituting a nationwide speed limit of 10 m.p.h. An alternative approach would be to force manufacturers to make "safe" cars. Clearly, society has rejected the "safe" car and opted to take its chances with a modest improvement in built-in safety features. This is society's cost/benefit judgment.

It makes no difference whether the hazard arises in the public or private sector, the "bottom line" is the cost/benefit ratio, whether those costs are accepted in the form of higher taxes to cover remedial action by government, or higher prices to cover industry's cost of complying with regulations. Either way, the public foots the bill and has a say in the matter, registering its opinion in the polling booth or through its daily buying decisions.

But environmental concerns are handled differently. They enjoy a special status and appear to be immune from the rigors of cost/benefit analysis to which other public issues are routinely subjected. This attitude is a residue from the sixties and early seventies when environmental clean-up was an activist crusade. The issue of environmental protection should be taken off its pedestal and given a place with all the other legitimate but less glamorous public concerns. It is a benefit the public wants and is prepared to pay for. We must order our priorities so that the public gets good value for its money.

Risk perception

We must also consider the consequences of taking no regulatory action: the risk to public health and the environment associated with existing and projected emissions. Statisticians can estimate with reasonable objectivity the risks of death, injury or disease associated with various activities. These risk numbers make fascinating reading, but they are only a guide to the decision maker, who has to determine what level of risk is acceptable to the public.

Here he is faced with two further problems. First, the public has shown that it is prepared to accept a much higher level of risk if it is self-imposed, as in smoking, than if it is involuntary, as in breathing polluted air. Secondly, the actual risk is not nearly as important as the public's perception of the risk. The politician must be sensitive to the public's fears and feelings — and fantasies.

We in industry are the first to criticize politicians for basing their decisions more on political sensitivity than on scientific facts. But it is sobering to reflect that if scientists and engineers responded rationally to hard scientific data, they wouldn't smoke and Bob Hope recently quipped that the United States is "the only country in the world that's about to ban saccharin and legalize marihuana." He forgot about Canada.

Cost-Effectiveness

Once a decision has been made to control emissions, the plant manager has to select an appropriate control strategy. The objective is to spend money where it will do the most good. The best results are obtained with new plants because the process engineer can incorporate pollution control as an integral part of the plant design.

It makes much less economic sense to insist that older plants meet present-day standards by simply adding pollution control devices. It makes no sense to invest huge sums of new capital to upgrade a plant which may be obsolete in design, inadequate in capacity and profitable only because it is fully depreciated.

At some point we must decide either to shut an older plant down or to allow it to continue until the end of its normal commercial life. Rapid advances in technology and changes in business conditions will ensure an orderly retirement of these older plants and their replacement by modern units incorporating the latest control technology. The competitiveness of Canadian industry supports our high standard of living and we should not allow it to be thoughtlessly jeopardized through an excess of environmental zeal. If society wants a continuing supply of "golden eggs," it should be prepared to put up with some goose excrement for a bit longer.

D.M. Young

Dr. Young is manager, Environmental Affairs for Dow Chemical of Canada.